

ECUADORIAN *PARASCATELLA* (DIPTERA: EPHYDRIDAE)

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Abstract.—Two new species of *Parascatella* Cresson are described from Ecuador: *P. ecuadorensis* (type-locality: Pujili, Cotopaxi, Ecuador); *P. spangleri* (type-locality: Santo Domingo [79.6 km E], Pinchincha, Ecuador). These are the first known species of *Parascatella* from Ecuador and represent the northernmost distribution records for the genus. *Parascatella ecuadorensis* is closely related to *P. spinicrus* Mathis and Shewell (the *pilifera* group), and *P. spangleri* is closely related to *P. brunnea* (the *brunnea* group). A key and figures of the wing, head, thorax, and male terminalia are provided.

Since publication of the revision of *Parascatella* Cresson by Mathis and Shewell (1978), two additional species have been collected in Ecuador and are being described here. This brings the total number of species in the genus to 12, although there are undoubtedly many others from the temperate regions of South America that remain to be discovered. The species described here are the first Ecuadorian species and represent the northernmost distribution records of the genus. Members of the genus were previously known to occur in Argentina, Chile, and southern Peru. Extrapolating from these data, I would expect to find representatives of *Parascatella* throughout most of the cordilleran system of western South America, where higher elevations provide for temperate climates. This area would include most of northern Peru, Bolivia, Colombia, and perhaps some of Venezuela.

Like species occurring farther south, those from Ecuador were collected primarily from higher elevations, all above 2500 m and frequently within the paramo vegetational zone. Immatures were not collected nor observed, and we still do not know anything about the natural history of the species except for descriptive notes regarding the general habitats where they were collected.

The descriptions of new species follow the same format Mathis and Shewell (1978) used in their revision.

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Parascatella Cresson

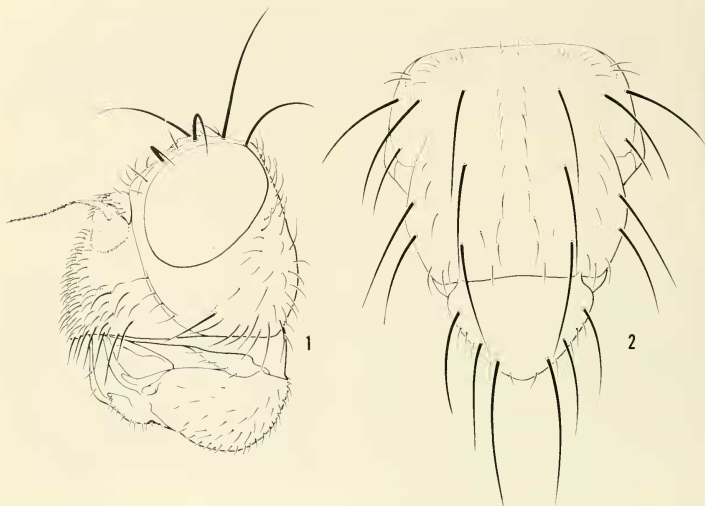
Parascatella Cresson, 1935:357 [type-species: *Scatella pilifera* Cresson, by original designation]. Mathis and Shewell, 1978:1-44 [revision].

Diagnosis.—Resembling other genera of the *Scatella* group of related genera but differing by the following combination of character states: 2 pairs of larger laterocline fronto-orbital bristles; lacking an outstanding pair or pairs of distinctly larger upcurved facial bristles, especially toward postero-ventral corner of face; 3 pairs of dorsocentral bristles (1 + 2); acrostichal setae seriated into 2 rows and usually moderately well developed to scutellum, often with a slightly larger pair of setae at level of transverse suture; supra-alar bristle subequal in length to postalar bristle; aedeagal apodeme flattened laterally, generally teardrop-shaped; surstyli evident at venter of epandrium as lobelike setulose processes.

Discussion.—A more complete description of *Parascatella* is provided in Mathis and Shewell (1978) and need not be repeated here. Likewise, a general discussion of the phylogeny and zoogeography of the genus is included in Mathis and Shewell (1978), and I have only tried to incorporate the species treated here within the framework established in their revision.

KEY TO ECUADORIAN SPECIES OF *PARASCATELLA*

- Face unicolorous, mostly brownish; interfoveal carina, in profile, not projecting markedly forward; scutellum with 3 pairs of lateral bristles; front femur with row of spinelike setae along posteroventral surface; wing cell R_3 with 2 small white spots aligned parallel with posterior crossvein; cell R_5 with 1 distinct but small white spot . . .
 *ecuadorensis*, new species
- Face distinctly bicolored, antennal foveae and area dorsal of interfoveal carina silvery white to white, contrasting with dark brown coloration on remainder of face; interfoveal carina, in profile, distinctly projecting anteriorly; scutellum with 2 pairs of lateral bristles; front femur lacking row of closely set setae; wing cell R_3 with 2 large white spots, one more or less aligned with posterior crossvein, the other in apical $\frac{1}{5}$ of cell; cell R_5 with 3 white spots
 *spangleri*, new species



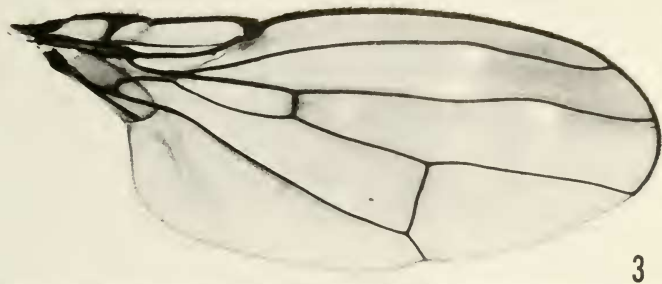
Figs. 1-2. *Parascatella ecuadorensis*. 1, Head, lateral view. 2, Thorax, dorsal view.

Parascatella ecuadorensis Mathis, NEW SPECIES

Figs. 1-3, 5

Diagnosis.—Specimens of *P. ecuadorensis* are similar to those of *P. spinicrus* Mathis and Shewell, *P. pilifera* (Cresson), and *P. lanicrus*, all of which have a row of close set, more or less spinelike setae along the posteroventral surface of the front femur. Specimens of *P. ecuadorensis*, however, may be distinguished from those of similar congeners by the following combination of character states: Face mostly unicolorous; interfoveal carina with dorsal crease but not conspicuously projecting anteriorly; dorsalmost post-ocular setae and acrostichal setae small, generally inconspicuous; front femur with row of spinelike setae along posteroventral margin only; wing of both sexes similar, cell R_3 with 2 small white spots, both aligned with posterior crossvein; 1 small white spot apicad of posterior crossvein in cell R_5 , this abutting vein R_{4+5} .

Description.—Medium-sized to moderately large shore flies, length 3.46 to 4.03 mm; head and thorax generally brown, faintly subshiny to shiny dorsally; abdomen brownish to slightly greenish gray, mostly pollinose, appearing dull. *Head* (Fig. 1): Mesofrons shiny, with brownish black to black luster; parafrons pollinose, brown toward vertex, becoming gradually green-



3



4

Figs. 3-4. Wing. 3, *Parascatella ecuadorensis*. 4, *Parascatella spangleri*.

ish brown toward facial suture; fronto-orbits slightly darker colored than parafrons, faintly subshiny; dorsalmost postocular seta small, subequal with others; fronto-orbits with 3-4 small setae in addition to 2 pairs of larger fronto-orbital bristles. Antenna mostly unicolorous, 1st and 2nd segments slightly lighter, brown to greenish brown, appearing dull; 3rd segment brownish black to black, becoming rather densely invested with macropubescent pile apically. Face unicolorous brown, becoming very gradually darker and shinier ventrally; interfoveal carina with distinct dorsal crease; gena more or less concolorous with face, especially antennal fovea. *Thorax* (Fig. 2): Mesonotum pollinose to subshiny, mostly brown but with blackish vittae, these not well differentiated posteriorly; scutellum less pollinose, appearing shinier. Notopleuron mostly concolorous with mesonotum; mesopleuron and pteropleuron concolorous, olivaceous brown, faintly subshiny; sternopleuron grayer and duller; front coxa mostly gray to whitish gray. Legs concolorous; femora greenish black with grayish pollinose vestiture, large areas on anterior and dorsal surfaces thinly pollinose, subshiny



Fig. 5. Distribution map. Dots = *Parascatella spangleri*, star = *Parascatella ecuadorensis*.

to shiny; tibiae darker colored than femora; tarsi mostly blackish; front femur with row of close set spinelike setae along posteroventral margin. Wing (Fig. 3) generally infumated, brownish; costal margin with evenly spaced spinelike setae; vein R_{2+3} and R_{4+5} sinuate; pattern of white spots as follows: Cell R_3 with 2 white spots aligned just slightly apicad of posterior crossvein, anterior 1 slightly better developed; cell R_5 with 2 white spots, 1 near base of cell, other at about apical $\frac{2}{3}$ of vein R_{4+5} ; base of wing mostly pale. *Abdomen*: Mostly grayish with some brownish or greenish-blue coloration; greenish-blue areas slightly subshiny, otherwise mostly pollinose, appearing dull; terga 2-4 of male subequal in length, 5th slightly longer than combined length of 3rd and 4th terga; terga 1-5 about subequal in females.

Types.—Holotype ♂, allotype ♀, and 1 ♂ paratype, labeled: "ECUADOR: Cotopaxi Pr[ovince] Pujili (34 km. W.) 3650 m. elev. 15 Jan 1978 WNMathis." The type-series is in the National Museum of Natural History, Smithsonian Institution, USNM Type No. 76121. The holotype specimen is double mounted (minute nadel) and is in good condition.

Geographic distribution (Fig. 5).—This species is only known from the type-locality as listed previously.

Natural history.—I collected the species by sweeping through the sparse vegetation and over muddy areas along a small waterfall and creek. The locality is situated at 3650 m elevation and the surrounding vegetation is typical of the paramo zone.

Etymology.—The specific epithet, *ecuadorensis*, refers to the country where this species occurs.

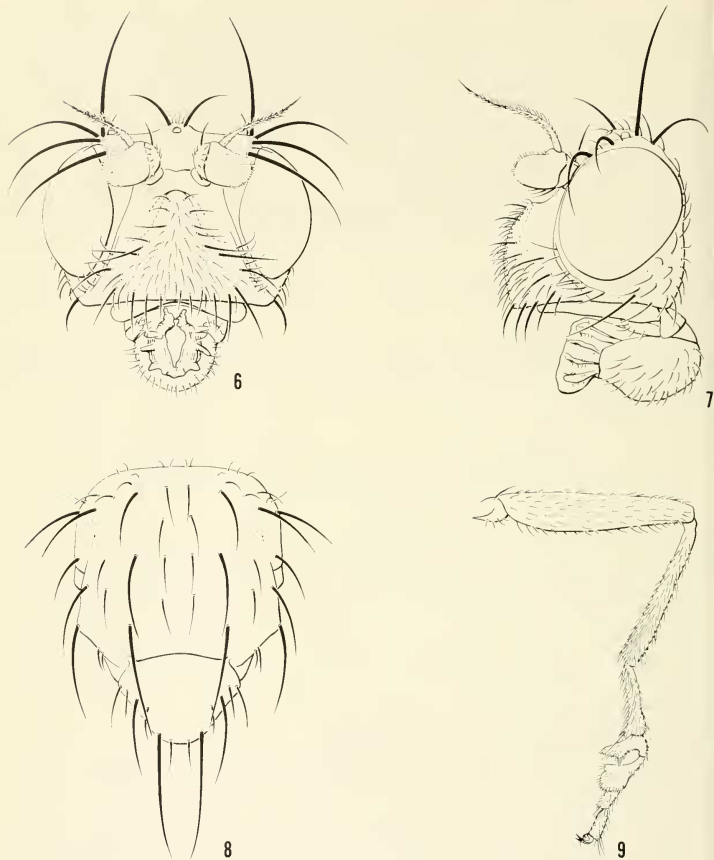
Discussion.—This species belongs to the *pilifera* group, as characterized by Mathis and Shewell (1978), and it is similar and probably closely related to *P. spinicrus*.

Parascatella spangleri Mathis, NEW SPECIES

Figs. 4–10

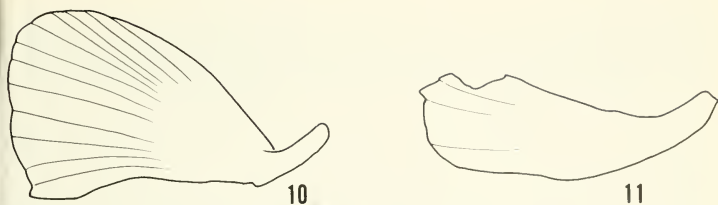
Diagnosis.—Specimens of *P. spangleri* most closely resemble those of *P. brunnea* but may be distinguished from the latter or other congeners by the following combination of character states: Antennal foveae and face dorsad of interfoveal carina white to silvery white; arista tapering gradually to tip, with branching rays almost to tip; 2nd and 3rd tarsomeres of front leg of male highly modified, explanate (see figures); mesonotum vittate, especially anteriorly; wing veins R_{4+5} and M_{1+2} conspicuously sinuate; cell R_3 with 2 white spots; cell R_5 with 3 conspicuous white spots; aedeagal apodeme higher, not more than $2\times$ as wide as high.

Description.—Moderately small shore flies, length 2.21 to 2.62 mm; grayish brown to blackish brown, mesonotum and mesofrons subshiny, otherwise mostly dull; densely pollinose. *Head* (Figs. 6–7): Mesofrons subshiny to shiny, with metallic brassy brown luster; parafrons pollinose, mostly dull charcoal brown to brown, becoming lighter, more brownish anteriorly; fronto-orbits slightly less pollinose than parafrons, darker in general; postocular setae all small. Antenna mostly unicolorous brownish black to black, 3rd segment invested with macropubescent scattered pile; arista tapering gradually to apex, with branching rays along dorsum nearly to apex. Face distinctly bicolored; antennal foveae and dorsum of face dorsad of interfoveal carina silvery white to white, conspicuously contrasting with blackish-brown color on remainder; becoming slightly more pollinose ventrally; interfoveal carina distinctly creased dorsally; longest facial setae about equal to length of 3rd antennal segment; gena appearing more pollinose and slight-



Figs. 6-9. *Parascatella spangleri*. 6. Head, anterior view. 7. Head, lateral view. 8. Thorax, dorsal view. 9. Front leg of male, anterior view.

ly lighter in color, grayer and tannish. *Thorax* (Fig. 8): Generally pollinose, dorsum dimly subshiny to distinctly subshiny. Mesonotum with 3 vittate markings anteriorly, these becoming weaker posteriorly, many specimens with only median 1 continuing to scutellum; vittae lighter in color, tannish, otherwise mesonotum brownish black, becoming shinier posteriorly; scu-



Figs. 10–11. Aedeagal apodeme. 10, *Parascattella spangleri*. 11, *Parascattella brunnea*.

tellum with only 2 larger lateral bristles, but with 3–4 pairs of setae in addition; propleuron decidedly lighter in color, yellowish tan to brown; notopleuron more or less concolorous with mesonotum; posterodorsal portion of mesonotum and anterior portion of pteropleuron mostly concolorous, brown; remaining pleural areas becoming grayer. Legs more or less concolorous; femora mostly grayish black, frequently with some faint greenish to olivaceous tinges; tibiae and tarsi mostly black; front tarsi of male modified (Fig. 9). 2nd and 3rd tarsomeres with median explanate projections. Wing (Fig. 4) shape and pattern of white spots similar in both sexes; with evenly spaced, spinelike setae along anterior margin; most veins conspicuously sinuate, particularly around white spots; generally infumated, brownish; pattern of white spots as follows: Cell R_3 with 2 spots, 1 aligned with posterior crossvein subrectangular and extending across cell, apical 1 circular and not abutting any veins; cell R_5 with 3 spots, 2 apicad of posterior crossvein and more or less in line with each other, posterior 1 slightly more apicad than anterior spot; discal cell with 1 spot along posterior margin in apical $\frac{1}{3}$ of cell; cell M_2 with 2 faintly developed spots more or less aligned parallel with posterior crossvein. *Abdomen*: Generally unicolorous, brownish black, faintly subshiny; terga 2–4 of male more or less subequal in length, 5th tergum as long as combined length of terga 2–4; female with terga 1–5 more or less subequal. Aedeagal apodeme (Fig. 10) relatively high, flattened laterally.

Types.—Holotype δ , allotype η , and 49 paratypes (25 δ , 24 η), labelled: "ECUADOR: Pinchincha (Province) Santo Domingo (79.6 km. E.) 2545 m. elev. 7 Jan 1978 WNMathis." Other paratypes as follows: ECUADOR: Chimborazo Province, Alausi, 40 mi S, 20 Feb 1955, E. I. Schlinger and E. S. Ross collectors (1 η , CAS); Cotopaxi Province, Latacunga, 16 mi N, 3000 m elev., 21 Feb 1955, E. I. Schlinger and E. S. Ross collectors (18 δ , 7 η ; CAS); Pujili, 65.3 km W, 3795 m elev., 15 Jan 1978, W. N. Mathis (5 δ , 2 η ; USNM). Napo Province, Papallaca, 4 km W, 18 Jan 1978, W. N. Mathis (1 η ; USNM). The holotype, allotype, and paratypes from the type-locality are in the National Museum of Natural History, Smithsonian Insti-

tution, USNM Type No. 76122. The holotype specimen is double mounted (minute nadel) and is in excellent condition. Paratypes will also be deposited in the Canadian National Collection, Ottawa; British Museum (Natural History), London; and American Museum of Natural History, New York.

Geographic distribution (Fig. 5).—This species is known to occur only in Ecuador, in the three provinces listed previously. Each of these localities is in the Andes Mountains above 2500 m elevation.

Natural history.—I collected the specimens from the type-locality in the cloud forest just west of Quito on the road descending from there to Santo Domingo. The day was overcast, and there was an occasional sprinkle of rain. The specimens were swept from vegetation, mostly grasses, around small pools of accumulated water on an old road bed.

Etymology.—It is my pleasure to name this species after my colleague and companion during the collecting trip which resulted in most of the type series, Dr. Paul J. Spangler.

Discussion.—This species is the sister species of *P. brunnea* and together these two species comprise the *brunnea* group, as characterized in Mathis and Shewell (1978:25). Like *P. brunnea*, specimens of *P. spangleri* have only two lateral scutellar bristles and the surstyli, although quite evident, are not as distinctly separated from the ventral margin of the epandrium. In addition, the face of members of this group is less setulose.

Unlike species of the *pilifera* group, the configuration of the aedeagal apodeme seems to be a distinguishing character at the species level in the *brunnea* group. This structure, in males of *P. spangleri*, is considerably higher and appears to be more robust than in males of *P. brunnea*.

LITERATURE CITED

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